

REMARKS

Claims 1-41 are presently pending. Claims 26 and 27 have been amended to improve the grammar of the claims, and not for reasons of patentability. New claims 39-41 have been added.

Applicants respectfully request reconsideration of the application in view of the foregoing amendments and the remarks appearing below.

Rejection under 35 U.S.C. § 102

The Examiner has rejected claims 1-23 and 25-38 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,646,521 to Rosenthal et al., stating that Rosenthal et al. disclose all of the limitations of these claims. Applicants respectfully disagree.

Rosenthal et al. disclose a mixed-signal tester for testing a device under test (DUT) via a loadboard. The tester includes a signal generator (e.g., analog source sequencer 350 and waveform source 380) and a signal digitizer (e.g., waveform measurer 390), both located aboard the tester, i.e., off-board the chip containing the DUT.

In contrast, independent claims 1 and 26 each require that each of the signal generator and signal digitizer be integrated onto a chip containing a circuit under test. For example, independent claim 1 particularly recites "a signal generator integrated on the chip" containing the circuit under test. This limitation requires that the chip have certain structure not found in the Rosenthal et al. chip, which contains the circuit under test. That is, in the present invention the chip contains not only the signal generator, but also the entire electrical connection between the signal generator and the circuit under test. The chip of the present invention does not need any external electrical contact for providing the circuit under test with a signal from the signal generator.

The Rosenthal et al. chip, on the other hand, does not contain either the signal generator or the onboard electrical connection between the signal generator and the circuit under test. Therefore, the Rosenthal et al. chip must necessarily contain some sort of external electrical contact(s) for receiving signals from the off-board signal generator so as to excite the onboard circuit under test. The chip of the present invention avoids the need for any contacts for this purpose. These differences between the chip of claim 1 and the Rosenthal et al. chip are also

present relative to the signal digitizer, which in the present invention and claim 1 is also integrated aboard the chip. Clearly, Rosenthal et al. do not disclose or suggest the integrated onboard signal generator and signal digitizer required by independent claim 1.

Regarding independent claim 26, this claim particularly requires, among other things, the step of "generating a test signal for exciting the circuit under test by a signal generator integrated on the chip." Applicants assert that generating a test signal aboard the same chip that contains the circuit under test is much different than the step of generating a test signal aboard an external tester and delivering the test signal to a chip containing a circuit under test via one or more external electrical contacts. The same holds true relative to the step of independent claim 26 of extracting a digital signal via an onboard signal digitizer that is much different from the corresponding Rosenthal et al. step of extracting a digital signal via an off-board signal digitizer. Clearly, Rosenthal et al. do not disclose or suggest the steps of independent claim 26 that require an onboard signal generator and signal digitizer.

For at least the foregoing reasons, Applicants assert that the subject matter of the Rosenthal et al. patent does not anticipate independent claims 1 and 26, nor claims 2-23, 25, 27-38, 40 and 41 that depend therefrom.

It is noted that each of claims 2-23, 25, 27-38, 40 and 41 may each contain one or more limitations not disclosed or suggested by Rosenthal et al. However, since these claims stand with independent claims 1 and 26 as discussed above, Applicants believe it is not necessary to address such limitations at this time.

Rejection under 35 U.S.C. § 103

The Examiner has rejected claim 24 under 35 U.S.C. § 103 as being obvious in view of the Rosenthal et al. patent, discussed above, stating that Rosenthal et al. disclose a testing system having all of the limitations of this claim except a plurality of generators, a plurality of digitizers and a means for programming the plurality of generators and digitizers so that a plurality of circuits under test can be selectively tested. The Examiner then asserts that it would have been obvious to a person having ordinary skill in the art at the time the present invention was made to provide the Rosenthal et al. system with these features. Applicants respectfully disagree.

Applicants assert that claim 24 is patentable over the Rosenthal et al. system for at least the reason that it depends from claim 1, which is patentable over the Rosenthal et al. system for the reasons discussed above relative to the anticipation rejection in view of the Rosenthal et al. patent. In addition, none of the other references presently of record, nor ordinary skill in the art, disclose or suggest the features of claims 1 and 24 not disclosed by Rosenthal et al. Therefore, Applicants respectfully request that the Examiner withdraw the present rejection.

New Claims

New claims 39-41 are not anticipated by the Rosenthal et al. patent for essentially the same reasons discussed above. That is, Rosenthal et al. do not disclose or suggest a chip containing a circuit under test and an integrated onboard signal generator and signal digitizer for testing the circuit under test, nor a method of testing a circuit under test using an integrated onboard signal generator and signal digitizer.

Conclusion

In view of the foregoing, Applicants respectfully submit that claims 1-41, as amended, are in condition for allowance. Therefore, prompt issuance of a Notice of Allowance is respectfully solicited. If any issues remain, the Examiner is encouraged to call the undersigned attorney at the number listed below.

Respectfully submitted,
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